

CLAIMS

1. Machine for the manufacture of lipsticks or similar, comprising a mobile support (1) for a plurality of housings (8) for flexible moulds (14) fillable with cosmetic product, said mobile support (1) being movable through a plurality of working positions comprising a position (17) for heating the flexible moulds, a position (18) for filling the flexible moulds with poured cosmetic product and a position (19) for cooling said poured cosmetic products, characterised in that said heating position (17) comprises means for the introduction of warm heating air into said moulds and said cooling position (19) comprises mould cooling means that operate by convection of cold air.

2. Machine according to claim 1, characterised in that it comprises:

- a first and second carousel (1, 2) located one next to the other and comprising respective annular horizontal plates (4, 6) revolving around respective parallel vertical axes (A, B), in which:

- the annular plate (4) of the first carousel (1) is provided with housings (8) for flexible moulds (14) that are fillable with molten cosmetic product;

- the annular plate (6) of the second carousel (2) is provided with housings (22) for cases (45) for the collection of solidified cosmetic product (44);

- the first carousel (1) comprises along the run of the respective annular plate (4) the sequence of a zone (17) for the introduction of warm air into said flexible moulds (14) for heating the same, a zone (18) for pouring molten cosmetic product into said flexible moulds (14), a cooling zone (19) operating by convection of cold air for said flexible moulds (14) and the cosmetic products (44) poured into them and a zone (20) for the insertion of said cases (45) into said flexible moulds (14) and around the cosmetic products (44) contained therein and for the subsequent extraction of said cases (45) with relative cosmetic products (44) stuck into them.

- the second carousel (2) comprises along the run of the respective annular plate (6) a zone (23) for the grasping and transfer of said cases (45) from said housings (22) of the second carousel (2) inside said flexible moulds (14) of the

first carousel (1) and for the return of said cases (45) with inserted cosmetic products (44) from said flexible moulds (13) to said housings (22) of the second carousel (2) and a zone (24) for the completion of the insertion of the cosmetic products (44) inside said cases (45).

5 3. Machine according to claim 2, characterised in that said cooling zone (19) of the first carousel (1) comprises a cooling device comprising air at room temperature that is made circulate inside a box (43) into which said flexible moulds (14) are inserted.

10 4. Machine according to claim 2, characterised in that between said zone (20) of the first carousel (1) in which said cases (45) get inside said flexible moulds (14) and around the cosmetic products (44) and are then picked up from said flexible moulds (14) together with said cosmetic products (44) and said zone (23) of the second carousel (2) in which said cases (45) are taken from said housings (22) of the second carousel (2) for their transfer inside said flexible
15 moulds (14) of the first carousel (1) and then taken back with inserted cosmetic products (44) into said housings (22) of the second carousel (2) a gripping unit (21) operates that is capable to take empty cases (45) from said housings (22) of the second carousel (2), to insert them in upside-down position inside said flexible moulds (14) of the first carousel (1) and finally to take them back to
20 their original position into said housings (22) of the second carousel (2) with said cosmetic products (44) inserted in said cases (45).

 5. Machine according to claim 4, characterised in that said gripping unit comprises (21) a vertically mobile head (26), a revolving hub (28) carried by said head (26) and an arm (29) with tongs (30) for the grasping of the cases (45)
25 fastened to said hub (28) in such a way as to be rotated by 180° from a position with tongs (30) superimposed to said housings (22) of the second carousel (2) to a position with tongs (30) overlapped to said housings (8) of the first carousel (1), and vice-versa.

30 6. Machine according to claim 2, characterised in that said cases (45) comprise an internal part (47) suitable to receive a cosmetic product (44) and an

external part (48) that is screwable as regards said internal part (47) for the complete insertion of said internal part (47) and of said cosmetic products (44) inside of said part external (48) and said zone (24) for the completion of the insertion of cosmetic product (44) into said cases (45) comprising a device (31) that is capable to cause the mutual screwing of said internal (47) and external (48) parts of said cases (45).

7. Machine according to claim 6, characterised in that said device (31) comprises tongs (34) for the gripping of said internal part (47) of the cases (45), sprung bearing surfaces (35) for said external part (48) of the cases (45) and revolving means (37) connected with said bearing surfaces (35) in such a way that their rotation causes the axial translation of said bearing surfaces (35) as regards said tongs (34).

8. Machine according to claim 2, characterised in that said zone for the heating (17) of the first carousel (1) comprises a main tube (54), containing a resistance (54) controlled by thermocouple, that connects a hose (51) with a collector (52) that supports small tubes (53) insertable in said flexible moulds (14).